



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,108	10/22/2003	Klaus Breitschwerdt	10191/3399	4772
26646 7590 03/19/2007 KENYON & KENYON LLP ONE BROADWAY NEW YORK, NY 10004			EXAMINER VINH, LAN	
			ART UNIT	PAPER NUMBER
			1765	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/19/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/691,108	Applicant(s) BREITSCHWERDT ET AL.	
	Examiner Lan Vinh	Art Unit 1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/12/2007 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 4 is rejected under 35 U.S.C. 102(e) as being anticipated by Hanawa et al (US 2002/0108713)

Hanawa discloses a plasma etching method. The method comprises the steps of: generating, with a plasma source that is configured to generate a high-frequency electro alternating field, a plasma having reactive species inside a chamber 12 in a reaction region by the action of the alternating field upon oxygen gas/an etching gas

Art Unit: 1765

inserted into the reaction region and film-forming gas SF₆/a passivating gas inserted into the reaction region (page 2, paragraph 0025, 0029; page)

in the reaction region, introducing/ inserting the etching gas predominantly through top port 71 into a top area/first zone in the chamber 12 and inserting the passivating gas predominantly through a side port 70 into a side area/second zone (page 3, paragraph 0034; page 6, paragraph 0061; fig. 1)

generating reactive oxygen/etching gas species in the first zone by using a plasma generated in plasma source 100, and generating reactive SF₆/passivating gas species in the second zone by using plasma that is generated by plasma system 30 (page 3, paragraph 0033, 0036, fig. 1 shows that plasma source 100 is independent of plasma system 30)

mixing the etching gas species and the passivating gas species with each other in a mixing region above the substrate (page 2, paragraph 0029; fig. 1), which reads on mixing the etching gas species and the passivating gas species with each other in a mixing region downstream from the reaction region before their action upon the substrate, wherein a plasma of significantly greater oxygen/etching gas flow rate is maintained (page 6, paragraph 0064), which reads on a quantity of the passivating gas that is used is minimized compared to a quantity of the etching gas

4. Claim 5 is rejected under 35 U.S.C. 102(e) as being anticipated by Hanawa et al (US 2002/0108713)

Hanawa discloses a plasma etching method. The method comprises the steps of:

generating, with a plasma source that is configured to generate a high-frequency electro alternating field, a plasma having reactive species inside a chamber 12 in a reaction region by the action of the alternating field upon oxygen gas/an etching gas inserted into the reaction region and film-forming gas SF₆/a passivating gas inserted into the reaction region (page 2, paragraph 0025, 0029; page)

in the reaction region, introducing/ inserting the etching gas predominantly through top port 71 into a top area/first zone in the chamber 12 and inserting the passivating gas predominantly through a side port 70 into a side area/second zone (page 3, paragraph 0034, page 6, paragraph 0061; fig. 1)

generating reactive oxygen/etching gas species in the first zone by using a plasma generated in plasma source 100, and generating reactive SF₆/passivating gas species in the second zone by using plasma that is generated by plasma system 30 (page 3, paragraph 0033, 0036, fig. 1 shows that plasma source 100 is independent of plasma system 30)

applying high-frequency power to the chamber from plasma source 100 for plasma generation in the chamber while the flow of the various gases is controlled through a system controller (page 2, paragraph 0029; page 3, paragraph 0036), which reads on at least an approximately constant proportion energy introduced by the plasma source into the plasma is input into the passivating gas at least approximately independently of the passivating gas flow in the reaction region

mixing the etching gas species and the passivating gas species with each other in a mixing region above the substrate (page 2, paragraph 0029; fig. 1), which reads on

Art Unit: 1765

mixing the etching gas species and the passivating gas species with each other in a mixing region downstream from the reaction region before their action upon the substrate,

Response to Arguments

5. Applicants argue that in Akahori, the generation of the passivating species in film formation chamber 22 does not take place independently of the etching gas species. This argument has been considered but are moot in view of the new ground(s) of rejection based on Hanawa since Hanawa discloses generating reactive oxygen/etching gas species in the first zone by using a plasma generated in plasma source 100, and generating reactive SF₆/passivating gas species in the second zone by using plasma that is generated by plasma system 30 (page 3, paragraph 0033, 0036, fig. 1 shows that plasma source 100 is independent of plasma system 30).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Vinh whose telephone number is 571 272 1471. The examiner can normally be reached on M-F 8:30-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571 272 1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1765

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'LV', is written above the typed name 'LV'.

LV

March 13, 2007